

REMARKS/ARGUMENTS

Applicants will respond to the various items in the office action in the order they are presented.

Information Disclosure Statement

The Examiner notes that the listing of references in the specification is not a proper Information Disclosure Statement. The specification reference listing was not intended to be a substitute for an Information Disclosure Statement. The references are presented as an aid to understanding the teaching set forth in the specification. Applicants are unaware of any prior art to the claims presented in this application. However, since the present application is a division of an issued parent application, for completeness of the record, Applicants will create and forward after this Response is filed an Information Disclosure Statement with the required fee setting forth all the patents which were cited in the parent.

Drawings

Applicants do not believe any changes were made to the drawings.

Specification

The examiner has objected to the specification and required appropriate correction because the: "...description of the drawings at pages 15-16 do not address each portion of each figure individually, as required." The amendment to the specification presented corrects the figure descriptions and brings them into conformity with the issued parent patent.

The Examiner has required a new title for the invention that: "...is clearly indicative of the invention to which the claims are directed." In the initial filing of the present application,

the original title of the parent application/issued patent was retained. Applicants agree with the Examiner's observation that a more clearly indicative title is needed that reflects the present claims. Applicants have not adopted the Examiner's suggested new title since Applicants believe it mischaracterizes the invention. Applicants have amended the title to reflect the invention set forth in the claims.

Claims

The claims have been amended to conform the claim terms to the language of the specification and the previously issued patent claims, to correct minor grammatical errors, and to correct minor errors in subsection reference.

Claim Rejections - 35 USC § 101

The Examiner has rejected claim 1-7:

"... under 35 USC § 101 because the claimed invention is directed to non-statutory subject matter. The claims are drawn to nonfunctional descriptive material. The claims are drawn to data representations of selected molecules that 'could be made in a combinatorial synthesis of specified reactants and a common core' those molecules being selected by a particular computer-implemented method. These selected molecules are mere presentations of information or abstract ideas which have not been practically applied. ... No physical molecules are actually created or synthesized, and the data generated by the computer implemented method is merely a list of data structures meeting particular limitations and thresholds.

Applicants respectfully disagree with the Examiner's analysis of the claims. Applicants

are aware of the Trilateral Project Report and do not find it dispositive as suggested by the Examiner's reference. Applicants do not claim an abstract idea or data structures. In fact, the claims are directed to concrete, tangible, and useful results. Applicants' specification teaches that a major problem with compound screening libraries is that they over represent some volumes of chemical diversity space and under represent other such volumes. Testing an over represented space wastes resources, and missing molecules in an under represented space misses possible discoveries. Claims 1-4 are directed to the answer to the following question: given available reactants and cores, what molecules represent the chemical diversity, which can be sampled with those reactants and cores, and do not needlessly over sample any particular part of the diversity space. The answer provided by the claims is a concrete, tangible, and highly useful result.

Claims 5-7 are directed to the answer to the following question: given available reactants and cores, what molecules, which can be assembled from those reactants and cores, are most likely to have the same activity as a known molecule. The answer provided by the claims is a concrete, tangible, and highly useful result particularly to those chemists involved in pharmaceutical drug discovery. The answers provided by the claims are used to focus research and experimentation thereby decreasing needless work and increasing the likelihood of discovery. Accordingly, Applicants respectfully request that the Examiner remove the 35 USC § 101 rejection.

Claim Rejections - 35 USC § 102

The Examiner has rejected claim 1-7:

"...under 35 U.S.C. 102(b) as being anticipated by Cramer, III et al. (USP

5,307,287).

The claims are drawn to data representations of selected molecules that 'could be made in a combinatorial synthesis of specified reactants and a common core' those molecules being selected by a particular computer-implemented method. These are product-by-process claims drawn to nonfunctional descriptive material. Cramer, III et al. (USP 5,307,287 - of record in 08/592132) discloses representations of molecules that could be created in a combinatorial synthesis of specified reactants and a common core. As such, this disclosure provides the same non-functional descriptive material as that being claimed."

Applicants must respectfully disagree with the Examiner's statement that the CoMFA patent of Crammer, III et al. discloses representations of molecules which could be created in a combinatorial synthesis. Applicants respectfully submit that the Examiner has misinterpreted the CoMFA disclosure. Applicants submit that there is no place in the Crammer et al. disclosure for the proposition cited by the Examiner because the CoMFA patent does not deal with combinatorial synthesis or methods of evaluating molecules which could be created in such a synthesis. The CoMFA patent teaches a method of evaluating a series of molecules which all have activity at a given receptor to determine the three dimensional characteristics common to the molecules which are responsible for the observed activity. The claims of the present application are directed to molecules.

Accordingly, Applicants respectfully submit that Cramer, III et al. does not anticipate the claims of the present application and request the Examiner to remove the 35 U.S.C. 102(b)

rejection.

The Examiner has rejected claim 1-7:

"...under 35 U.S.C. 102(e) as being anticipated by Agrafiotis et al. (5,463,564).

The claims are drawn to data representations of selected molecules that 'could be made in a combinatorial synthesis of specified reactants and a common core' those molecules being selected by a particular computer-implemented method. These are product-by-process claims drawn to nonfunctional descriptive material. Agrafiotis (USP 5,463,564 - of record in 08/592132) discloses representations of molecules that could be created in a combinatorial synthesis of specified reactants and a common core. As such, this disclosure provides the same non-functional descriptive material as that being claimed."

Conceding only for the sake of argument that Agrafiotis might teach representations of molecules which could be created in a combinatorial synthesis, Applicants submit that there is a substantial reason that Agrafiotis can not anticipate Applicants claims. That reason is the fact that Agrafiotis does not utilize or suggest the utilization of validated molecular structural descriptors. Applicants' specification teaches that unless one uses validated descriptors, any selection of molecules is essentially equivalent to a random selection. Two great advances were disclosed in Applicants' specification and are utilized in the claims, namely: 1) a method for determining whether a descriptor was valid; and 2) a disclosure of validated descriptors. No method which "discloses representations of molecules that could be created in a combinatorial

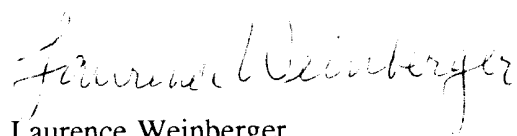
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synthesis of specified reactants and a common core" without disclosing a method to validate and use validated descriptors in that method can anticipate Applicants' method. Accordingly, Agraftotis et al. can not anticipate Applicants' invention, and Applicants respectfully request the Examiner to remove the 35 U.S.C. 102(e) rejection.

Applicants submit that they have adequately addressed all grounds for rejection raised by the Examiner and respectfully request that a timely Notice of Allowance be issued in this case.

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Respectfully submitted,



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